§ 143-64.15. Life-cycle cost analysis.

(a) A life-cycle cost analysis shall be commenced at the schematic design phase of the construction or renovation project, shall be updated or amended as needed at the design development phase, and shall be updated or amended again as needed at the construction document phase. A life-cycle cost analysis shall include, but not be limited to, all of the following elements:

(1) The coordination, orientation, and positioning of the facility on its physical site.

(2) The amount and type of fenestration and the potential for daylighting employed in the facility.

(3) Thermal characteristics of materials and the amount of insulation incorporated into the facility design.

(4) The variable occupancy and operating conditions of the facility, including illumination levels.

(5) Architectural features that affect the consumption of energy, water, and other utilities.

(b) The life-cycle cost analysis performed for any State facility shall, in addition to the requirements set forth in subsection (a) of this section, include, but not be limited to, all of the following:

(1) An energy-consumption analysis of the facility's energy-consuming systems in accordance with the provisions of subsection (g) of this section.

(2) The initial estimated cost of each energy-consuming system being compared and evaluated.

(3) The estimated annual operating cost of all utility requirements.

(4) The estimated annual cost of maintaining each energy-consuming system.

(5) The average estimated replacement cost for each system expressed in annual terms for the economic life of the facility.

(c) Each entity shall conduct a life-cycle cost analysis pursuant to this section for the construction or the renovation of any State facility or State-assisted facility of 20,000 or more gross square feet. For the replacement of heating, ventilation, and air-conditioning equipment in any State facility or State-assisted facility of 20,000 or more gross square feet, the entity shall conduct a life-cycle cost analysis of the replacement equipment pursuant to this section when the replacement is financed under a guaranteed energy savings contract or financed using repair and renovation funds.

(d) The life-cycle cost analysis shall be certified by a registered professional engineer or bear the seal of a North Carolina registered architect, or both. The engineer or architect shall be particularly qualified by training and experience for the type of work involved, but shall not be employed directly or indirectly by a fuel provider, utility company, or group supported by fuel providers or utility funds. Plans and specifications for facilities involving public funds shall be designed in conformance with the provisions of G.S. 133-1.1.

(e) In order to protect the integrity of historic buildings, no provision of this Article shall be interpreted to require the implementation of measures to conserve energy, water, or other utility use that conflict with respect to any property eligible for, nominated to, or entered on the National Register of Historic Places, pursuant to the National Historic Preservation Act of 1966, P.L. 89-665; any historic building located within an historic district as provided in Chapters 160A or 153A of the General Statutes; any historic building listed, owned, or under the jurisdiction of an historic properties commission as provided in Chapter 160A or 153A; nor any historic property owned by the State or assisted by the State.

(f) Each State agency shall use the life-cycle cost analysis over the economic life of the facility in selecting the optimum system or combination of systems to be incorporated into the design of the facility.

(g) The energy-consumption analysis of the operation of energy-consuming systems utilities in a facility shall include, but not be limited to, all of the following:

(1) The comparison of two or more system alternatives.

(2) The simulation or engineering evaluation of each system over the entire range of operation of the facility for a year's operating period.

(3) The engineering evaluation of the consumption of energy, water, and other utilities of component equipment in each system considering the operation of such components at other than full or rated outputs. (1993, c. 334, s. 6; 2001-415, ss. 4, 5; 2006-190, s. 13; 2007-546, s. 4.1.)